

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Richland

2800 George Washington Way

Richland, WA 99352

Tel: (509)375-3131

TestAmerica Job ID: 300-7003-1

TestAmerica Sample Delivery Group: WC2819

Client Project/Site: S18-004

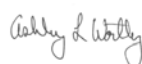
For:

CH2M Hill Plateau Remediation Company

825 Jadwin Avenue

Richland, Washington 99352

Attn: CPP Sample Management



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Authorized for release by:

5/10/2018 7:55:39 AM

Ashley Worthy, Project Manager I

(509)375-3131

[ashley.worthy@testamericainc.com](mailto:ashley.worthy@testamericainc.com)

### LINKS

Review your project  
results through**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the attached signature.

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples.

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
o	LCS, LCSD: Recovery exceeds upper or lower control limits.
U	Analyzed for but not detected.
y	Duplicate analysis not within control limits.

### General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

**Job ID: 300-7003-1**

**Laboratory: TestAmerica Richland**

**Narrative**

**Job Narrative  
300-7003-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 4/10/2018 2:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

**HPLC/IC**

Method(s) 300.0: An incorrect volume of spiking solution was inadvertently added to the laboratory control sample (LCS) BATCH ID 10926 Chloride and Fluoride. Percent recoveries are based on the amount spiked. CCV are prepared exactly as the LCS for water samples as there are no preparation steps. All CCV pass. Data was reported as is.

Method(s) 300.0: The sample duplicate precision for the following sample associated with analytical batch 300-10926 was outside control limits: B3HV80 (300-7003-6). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

Method(s) 300.0: The matrix spike (MS) recoveries for analytical batch 300-10926 were outside control limits for Sulfate. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**General Chemistry**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

CH2MH11 Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # S18-004-249		
								Page 1 of 1		
Collector:	Jeff Lucas MCPKPC			Contact/Requester:	Karen Waters-Husted			Telephone No.: 509-376-4650		
SAF No.:	S18-004			Sampling Origin:	Hanford Site			Purchase Order/Charge Code: 300071		
Project Title:	SURV, APRIL 2018			Logbook No.:	HNF-N-506 100			Ice Chest No.: N/A		
Shipped To (Lab):	TestAmerica Incorporated, Rich			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.: N/A		
Protocol	CERCLA			Priority:	30 Days			Offsite Property No.: N/A		
POSSIBLE SAMPLE HAZARDS/REMARK * * * Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1				SPECIAL INSTRUCTIONS N/A						
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis			Holding Time	Preservative
B3HV36	N	W	APR 10 2018	1330	1x60-mL ag	7196_CR6: COMMON			24 Hours	Cool <=6C
B3HV37	Y	W			1x60-mL ag	7196_CR6: COMMON			24 Hours	Cool <=6C

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300-7003 COC

Relinquished By:	Jeff Lucas ICPRCC	APR 10 2018	1410	Received By:	Lois Neal ICPRCC	APR 10 2018	1400	<b>Matrix *</b> S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquid T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Print First and Last Name	Signature	Date/Time		Print First and Last Name	Signature	Date/Time		
Relinquished By:	Lois Neal ICPRCC	APR 10 2018	1435	Received By:	Tom Holm ICPRCC	APR 10 2018	1438	
Print First and Last Name	Signature	Date/Time		Print First and Last Name	Signature	Date/Time		
Relinquished By:				Received By:				
Print First and Last Name	Signature	Date/Time		Print First and Last Name	Signature	Date/Time		
Relinquished By:				Received By:				
Print First and Last Name	Signature	Date/Time		Print First and Last Name	Signature	Date/Time		
Relinquished By:				Received By:				
Print First and Last Name	Signature	Date/Time		Print First and Last Name	Signature	Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):						Disposed By:	Date/Time:

CH2MHill Plateau  
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #  
S18-004-251  
Page 1 of 1

Collector:	Jeff Lucas IC/HRMC	Contact/Requester:	Karen Waters-Husted	Telephone No.:	509-376-4650
SAF No.:	S18-004	Sampling Origin:	Hanford Site	Purchase Order/Charge Code:	300071
Project Title:	SURV, APRIL 2018	Logbook No.:	HNF-N-506 100	Ice Chest No.:	N/A
Shipped To (Lab):	TestAmerica Incorporated, Rich	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.:	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.:	N/A

**POSSIBLE SAMPLE HAZARDS/REMARK**  
 \*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

**SPECIAL INSTRUCTIONS**  
 N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HVB1	N		APR 10 2018	1348	1x60-mL ag	7196_CR6: COMMON	24 Hours	COOL <=6C
B3HVB2	Y	W			1x60-mL ag	7196_CR6: COMMON	24 Hours	COOL <=6C

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Relinquished By:	Jeff Lucas IC/HRMC	Signature	APR 10 2018 1400	Received By:	Lesly Neal IC/HRMC	Signature	APR 10 2018 1400	<b>Matrix *</b> S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WL = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time			
Relinquished By:	Lesly Neal IC/HRMC	Signature	APR 10 2018 1455	Received By:	JARI	Signature	4/10/18 14:35	
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time			
Relinquished By:	Signature	Date/Time	Received By:	Signature	Date/Time			
Relinquished By:	Signature	Date/Time	Received By:	Signature	Date/Time			
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time			

<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:
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CH2M111 Plateau  
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #  
S18-004-248  
Page 1 of 1

Collector:	Jeff Lucas /CHPRC	Contact/Requester:	Karen Waters-Husted	Telephone No.:	509-376-4650
SAF No.:	S18-004	Sampling Origin:	Hanford Site	Purchase Order/Charge Code:	300071
Project Title:	SURV, APRIL 2018	Logbook No.:	HNF-N-506 100	Ice Chest No.:	N/A
Shipped To (Lab):	TestAmerica Incorporated, Rich	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.:	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.:	N/A
POSSIBLE SAMPLE HAZARDS/REMARK *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1			SPECIAL INSTRUCTIONS N/A		

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HV95	N	W	APR 10 2018	1330	1x125-mL P	300.0_ANTIONS_IC: COMMON	48 Hours	COOL <=6C

7003  
WC 2819

Relinquished By:	Jeff Lucas /CHPRC	Signature	APR 10 2018	1400	Received By:	Lesly West /CHPRC	Signature	APR 10 2018	1400
Print First and Last Name		Signature		Date/Time	Print First and Last Name		Signature		Date/Time
Relinquished By:	Lesly West /CHPRC	Signature	APR 10 2018	1435	Received By:	TARL	Signature	4/16/18	1435
Print First and Last Name		Signature		Date/Time	Print First and Last Name		Signature		Date/Time
Relinquished By:		Signature		Date/Time	Received By:		Signature		Date/Time
Print First and Last Name		Signature		Date/Time	Print First and Last Name		Signature		Date/Time
Relinquished By:		Signature		Date/Time	Received By:		Signature		Date/Time
Print First and Last Name		Signature		Date/Time	Print First and Last Name		Signature		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):				Disposed By:		Date/Time:		

Matrix: \*  
S = Soil DS = Drum Solids  
SE = Sediment DL = Drum Liquid  
SO = Solid T = Tissue  
SL = Sludge WL = Wipe  
W = Water L = Liquid  
O = Oil V = Vegetation  
A = Air X = Other

CH2M HILL Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # S18-004-260		
								Page 1 of 1		
Collector:	Jeff Lucas IC/PRC			Contact/Requester:	Karen Waters-Husted			Telephone No.:	509-376-4650	
SAF No.:	S18-004			Sampling Origin:	Hanford Site			Purchase Order/Charge Code:	300071	
Project Title:	SURV, APRIL 2018			Logbook No.:	HNF-N-506 100			Ice Chest No.:	N/A	
Shipped To (Lab):	TestAmerica Incorporated, Rich			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.:	N/A	
Protocol	CERCLA			Priority:	30 Days			Offsite Property No.:	N/A	
POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1				SPECIAL INSTRUCTIONS N/A						
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis			Holding Time	Preservative
B3HV80	N		W APR 10 2018	0928	1x125-mL P	300.0_ANTONS_IC: COMMON			48 Hours	Cool <=6C

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Relinquished By:	JEFF LARSEN KCHRC	APR 10 2018	0935
Print First and Last Name	Signature	Date/Time	
Relinquished By:	LARRY WALL KCHRC	APR 10 2018	1435
Print First and Last Name	Signature	Date/Time	
Relinquished By:			
Print First and Last Name	Signature	Date/Time	
Relinquished By:			
Print First and Last Name	Signature	Date/Time	
Received By:	LARRY WALL KCHRC	APR 10 2018	0935
Print First and Last Name	Signature	Date/Time	
Received By:	TARL	4/10/18	1435
Print First and Last Name	Signature	Date/Time	
Received By:			
Print First and Last Name	Signature	Date/Time	
Received By:			
Print First and Last Name	Signature	Date/Time	
Matrix *	S = Soil	DS = Drum Solids	
	SE = Sediment	DL = Drum Liquid	
	SO = Solid	T = Tissue	
	SL = Sludge	WL = Wipe	
	W = Water	L = Liquid	
	O = Oil	V = Vegetation	
	A = Air	X = Other	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

# May 10, 2018 Detection Summary

Rev 0

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

**Client Sample ID: B3HV96**

**Lab Sample ID: 300-7003-1**

No Detections.

**Client Sample ID: B3HV97**

**Lab Sample ID: 300-7003-2**

No Detections.

**Client Sample ID: B3HVB1**

**Lab Sample ID: 300-7003-3**

No Detections.

**Client Sample ID: B3HVB2**

**Lab Sample ID: 300-7003-4**

No Detections.

**Client Sample ID: B3HV95**

**Lab Sample ID: 300-7003-5**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	65	D o	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	22	D	0.56	0.28	mg/L	20		300.0	Total/NA
Fluoride	0.37	D o	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	190	D	5.0	2.5	mg/L	20		300.0	Total/NA

**Client Sample ID: B3HV80**

**Lab Sample ID: 300-7003-6**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	34	o D	1.0	0.50	mg/L	5		300.0	Total/NA
Nitrate as N	4.6	D	0.14	0.070	mg/L	5		300.0	Total/NA
Fluoride	0.24	D o y	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	130	D	1.3	0.63	mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

May 10, 2018  
Client Sample Results

Rev 0

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Client Sample ID: B3HV96

Date Collected: 04/10/18 13:30

Date Received: 04/10/18 14:35

Lab Sample ID: 300-7003-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			04/10/18 15:56	1

Client Sample ID: B3HV97

Date Collected: 04/10/18 13:30

Date Received: 04/10/18 14:35

Lab Sample ID: 300-7003-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			04/10/18 15:56	1

Client Sample ID: B3HVB1

Date Collected: 04/10/18 12:48

Date Received: 04/10/18 14:35

Lab Sample ID: 300-7003-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			04/10/18 15:56	1

Client Sample ID: B3HVB2

Date Collected: 04/10/18 12:48

Date Received: 04/10/18 14:35

Lab Sample ID: 300-7003-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			04/10/18 15:57	1

Client Sample ID: B3HV95

Date Collected: 04/10/18 13:30

Date Received: 04/10/18 14:35

Lab Sample ID: 300-7003-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	65	D o	0.40	0.20	mg/L			04/10/18 20:38	2
Nitrate as N	22	D	0.56	0.28	mg/L			04/11/18 01:11	20
Fluoride	0.37	D o	0.10	0.050	mg/L			04/10/18 20:38	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			04/10/18 20:38	2
Sulfate	190	D	5.0	2.5	mg/L			04/11/18 01:11	20

Client Sample ID: B3HV80

Date Collected: 04/10/18 09:28

Date Received: 04/10/18 14:35

Lab Sample ID: 300-7003-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34	o D	1.0	0.50	mg/L			04/11/18 01:27	5
Nitrate as N	4.6	D	0.14	0.070	mg/L			04/11/18 01:27	5
Fluoride	0.24	D o y	0.10	0.050	mg/L			04/10/18 19:49	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			04/10/18 19:49	2
Sulfate	130	D	1.3	0.63	mg/L			04/11/18 01:27	5

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-10926/11

Matrix: Water

Analysis Batch: 10926

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			04/10/18 16:37	1
Fluoride	0.025	U	0.050	0.025	mg/L			04/10/18 16:37	1
Sulfate	0.13	U	0.25	0.13	mg/L			04/10/18 16:37	1

Lab Sample ID: LCS 300-10926/12

Matrix: Water

Analysis Batch: 10926

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.0	3.23	o	mg/L		20	80 - 120
Fluoride	4.00	2.20	o	mg/L		55	80 - 120
Sulfate	20.0	16.6		mg/L		83	80 - 120

Lab Sample ID: 300-7003-6 MS

Matrix: Water

Analysis Batch: 10926

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.24	D o y	0.800	1.24	D	mg/L		125	75 - 125

Lab Sample ID: 300-7003-6 MS

Matrix: Water

Analysis Batch: 10926

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	34	o D	8.00	40.4	D	mg/L		82	75 - 125
Sulfate	130	D	10.0	138	D	mg/L		62	75 - 125

Lab Sample ID: 300-7003-6 DU

Matrix: Water

Analysis Batch: 10926

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.24	D o y	0.421	D o y	mg/L		56	20

Lab Sample ID: 300-7003-6 DU

Matrix: Water

Analysis Batch: 10926

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	34	o D	33.6	o D	mg/L		0.8	20
Sulfate	130	D	131	D	mg/L		0.6	20

Lab Sample ID: MB 300-10927/11

Matrix: Water

Analysis Batch: 10927

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			04/10/18 16:37	1

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 300-10927/11

Matrix: Water

Analysis Batch: 10927

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.019	U	0.038	0.019	mg/L			04/10/18 16:37	1

Lab Sample ID: LCS 300-10927/12

Matrix: Water

Analysis Batch: 10927

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.26	2.54		mg/L		113	80 - 120
Nitrite as N	3.04	3.41		mg/L		112	80 - 120

Lab Sample ID: 300-7003-6 MS

Matrix: Water

Analysis Batch: 10927

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	0.038	U D	0.609	0.571	D	mg/L		94	75 - 125

Lab Sample ID: 300-7003-6 MS

Matrix: Water

Analysis Batch: 10927

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.6	D	1.13	5.56	D	mg/L		89	75 - 125

Lab Sample ID: 300-7003-6 DU

Matrix: Water

Analysis Batch: 10927

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrite as N	0.038	U D	0.101	D	mg/L		NC	20

Lab Sample ID: 300-7003-6 DU

Matrix: Water

Analysis Batch: 10927

Client Sample ID: B3HV80

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	4.6	D	4.50	D	mg/L		1	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-10935/3

Matrix: Water

Analysis Batch: 10935

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			04/10/18 15:52	1

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: LCS 300-10935/4

Matrix: Water

Analysis Batch: 10935

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.255		mg/L		102	80 - 120

Lab Sample ID: 300-7004-A-1 MS

Matrix: Water

Analysis Batch: 10935

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0015	U	0.0501	0.0523		mg/L		104	75 - 125

Lab Sample ID: 300-7004-A-1 DU

Matrix: Water

Analysis Batch: 10935

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.0015	U	0.0015	U	mg/L		NC	20

May 10, 2018  
QC Association Summary

Rev 0

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

### HPLC/IC

#### Analysis Batch: 10926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-7003-5	B3HV95	Total/NA	Water	300.0	
300-7003-5	B3HV95	Total/NA	Water	300.0	
300-7003-6	B3HV80	Total/NA	Water	300.0	
300-7003-6	B3HV80	Total/NA	Water	300.0	
MB 300-10926/11	Method Blank	Total/NA	Water	300.0	
LCS 300-10926/12	Lab Control Sample	Total/NA	Water	300.0	
300-7003-6 MS	B3HV80	Total/NA	Water	300.0	
300-7003-6 MS	B3HV80	Total/NA	Water	300.0	
300-7003-6 DU	B3HV80	Total/NA	Water	300.0	
300-7003-6 DU	B3HV80	Total/NA	Water	300.0	

#### Analysis Batch: 10927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-7003-5	B3HV95	Total/NA	Water	300.0	
300-7003-5	B3HV95	Total/NA	Water	300.0	
300-7003-6	B3HV80	Total/NA	Water	300.0	
300-7003-6	B3HV80	Total/NA	Water	300.0	
MB 300-10927/11	Method Blank	Total/NA	Water	300.0	
LCS 300-10927/12	Lab Control Sample	Total/NA	Water	300.0	
300-7003-6 MS	B3HV80	Total/NA	Water	300.0	
300-7003-6 MS	B3HV80	Total/NA	Water	300.0	
300-7003-6 DU	B3HV80	Total/NA	Water	300.0	
300-7003-6 DU	B3HV80	Total/NA	Water	300.0	

### General Chemistry

#### Analysis Batch: 10935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-7003-1	B3HV96	Total/NA	Water	7196A	
300-7003-2	B3HV97	Total/NA	Water	7196A	
300-7003-3	B3HVB1	Total/NA	Water	7196A	
300-7003-4	B3HVB2	Total/NA	Water	7196A	
MB 300-10935/3	Method Blank	Total/NA	Water	7196A	
LCS 300-10935/4	Lab Control Sample	Total/NA	Water	7196A	
300-7004-A-1 MS	Matrix Spike	Total/NA	Water	7196A	
300-7004-A-1 DU	Duplicate	Total/NA	Water	7196A	

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004TestAmerica Job ID: 300-7003-1  
SDG: WC2819

## Client Sample ID: B3HV96

Date Collected: 04/10/18 13:30

Date Received: 04/10/18 14:35

## Lab Sample ID: 300-7003-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:56	TRH	TAL RCH

## Client Sample ID: B3HV97

Date Collected: 04/10/18 13:30

Date Received: 04/10/18 14:35

## Lab Sample ID: 300-7003-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:56	TRH	TAL RCH

## Client Sample ID: B3HVB1

Date Collected: 04/10/18 12:48

Date Received: 04/10/18 14:35

## Lab Sample ID: 300-7003-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:56	TRH	TAL RCH

## Client Sample ID: B3HVB2

Date Collected: 04/10/18 12:48

Date Received: 04/10/18 14:35

## Lab Sample ID: 300-7003-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:57	TRH	TAL RCH

## Client Sample ID: B3HV95

Date Collected: 04/10/18 13:30

Date Received: 04/10/18 14:35

## Lab Sample ID: 300-7003-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL	1.0 mL	10926	04/10/18 20:38	RTQ	TAL RCH
Total/NA	Analysis	300.0		2			10927	04/10/18 20:38	RTQ	TAL RCH
Total/NA	Analysis	300.0		20			10926	04/11/18 01:11	RTQ	TAL RCH
Total/NA	Analysis	300.0		20			10927	04/11/18 01:11	RTQ	TAL RCH

## Client Sample ID: B3HV80

Date Collected: 04/10/18 09:28

Date Received: 04/10/18 14:35

## Lab Sample ID: 300-7003-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2			10926	04/10/18 19:49	RTQ	TAL RCH
Total/NA	Analysis	300.0		2			10927	04/10/18 19:49	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10926	04/11/18 01:27	RTQ	TAL RCH

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Client Sample ID: B3HV80

Lab Sample ID: 300-7003-6

Date Collected: 04/10/18 09:28

Matrix: Water

Date Received: 04/10/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5			10927	04/11/18 01:27	RTQ	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-10926/11

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10926	04/10/18 16:37	RTQ	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-10927/11

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10927	04/10/18 16:37	RTQ	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-10935/3

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:52	TRH	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-10926/12

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10926	04/10/18 16:53	RTQ	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-10927/12

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10927	04/10/18 16:53	RTQ	TAL RCH

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004TestAmerica Job ID: 300-7003-1  
SDG: WC2819

## Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-10935/4

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:52	TRH	TAL RCH

## Client Sample ID: B3HV80

Lab Sample ID: 300-7003-6 MS

Date Collected: 04/10/18 09:28

Matrix: Water

Date Received: 04/10/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2			10926	04/10/18 21:10	RTQ	TAL RCH
Total/NA	Analysis	300.0		2			10927	04/10/18 21:10	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10926	04/11/18 02:15	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10927	04/11/18 02:15	RTQ	TAL RCH

## Client Sample ID: Matrix Spike

Lab Sample ID: 300-7004-A-1 MS

Date Collected: 04/10/18 11:38

Matrix: Water

Date Received: 04/10/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:52	TRH	TAL RCH

## Client Sample ID: B3HV80

Lab Sample ID: 300-7003-6 DU

Date Collected: 04/10/18 09:28

Matrix: Water

Date Received: 04/10/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2			10926	04/10/18 21:26	RTQ	TAL RCH
Total/NA	Analysis	300.0		2			10927	04/10/18 21:26	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10926	04/11/18 02:31	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10927	04/11/18 02:31	RTQ	TAL RCH

## Client Sample ID: Duplicate

Lab Sample ID: 300-7004-A-1 DU

Date Collected: 04/10/18 11:38

Matrix: Water

Date Received: 04/10/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10935	04/10/18 15:55	TRH	TAL RCH

## Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

May 10, 2018  
Sample Summary

Rev 0

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-004

TestAmerica Job ID: 300-7003-1  
SDG: WC2819

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-7003-1	B3HV96	Water	04/10/18 13:30	04/10/18 14:35
300-7003-2	B3HV97	Water	04/10/18 13:30	04/10/18 14:35
300-7003-3	B3HVB1	Water	04/10/18 12:48	04/10/18 14:35
300-7003-4	B3HVB2	Water	04/10/18 12:48	04/10/18 14:35
300-7003-5	B3HV95	Water	04/10/18 13:30	04/10/18 14:35
300-7003-6	B3HV80	Water	04/10/18 09:28	04/10/18 14:35

TestAmerica Richland

## Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-7003-1

SDG Number: WC2819

Login Number: 7003

List Number: 1

Creator: Holm, Tina R

List Source: TestAmerica Richland

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	